(54) Title: A METHOD FOR PROVIDING A COMMUNICATIONS NETWORK SUBSCRIBER WITH AN ANONYMOUS TEMPORARY SUBSCRIBER IDENTITY AND A DUAL ANONYMOUS COMMUNICATION SYSTEM
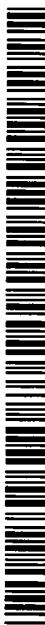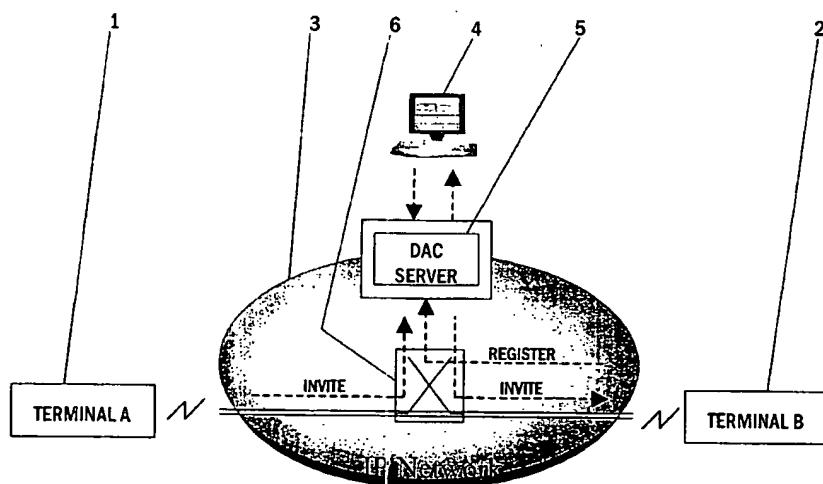
(57) Abstract: The present invention describes a communications network based method for providing a communications network subscriber using SIP signalling for communication path set up with an anonymous temporary identity and a dual anonymous communication system. In the solution according to the present invention a subscriber can reserve a temporary subscriber identity or even several temporary subscriber identities. The temporary subscriber identity will be associated to the person's real phone number in the application server that handles dual anonymous communication in the communications network.

1

A METHOD FOR PROVIDING A COMMUNICATIONS NETWORK SUBSCRIBER
WITH AN ANONYMOUS TEMPORARY SUBSCRIBER IDENTITY AND A DUAL
ANONYMOUS COMMUNICATION SYSTEM

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Technical field of the invention

The present invention relates in general to communication
networks and more specifically to a communications network

10   based method for providing a communications network sub-
scriber with an anonymous temporary subscriber identity
and to a dual anonymous communication system.

Background of the invention

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The background of the invention is discussed briefly in
the following.

With dual anonymous communication is meant communication

20   between two parties, where neither originating nor termi-
nating party knows the other party's real subscriber iden-
tity.

Today, the most typical and popular form of dual anonymous

25   communication is anonymous chatting. One can do anonymous
chatting on the Internet in several forums, GSM chat, on
the TV, over GSM and other forums (GSM, Global System for
Mobile communication). By 'anonymous' in this context is
meant that the people in the chat forum do not (necessar-

30   ily) know the real identity (name, e-mail address, phone
number, etc.) of each other.

The problem arises when two parties in the chat forum want
to talk to each other on the phone while still wanting to

35   keep their identity secret from the other party.

One may imagine two persons A and B who don't know each other chatting either in the TV using SMS (SMS, Short Message Service) or on the Internet using aliases. They would like to call each other to arrange e.g. a date but both of

5   them are too shy to give their real phone number or don't want to give the real number in case the other person turns out to be a troublemaker. This is especially true when the chat is going on in TV – as then lots of other people might see the real phone number and start harass-

10   ing.

Already today there exists services that enable anonymous calls to voice chat rooms. It is also possible for the originating party to suppress his subscriber identity.

15   Anonymous e-mail has also been possible for years. The originating party can also use Calling Line Identity Restriction to suppress his phone number.

There also exist today certain known technologies for

20   anonymous communication. However, these are limited to certain services and apply on circuit-switched networks that are gradually being phased out as all communication (speech, data) is moving to IP based networks.

25   Nevertheless, in the IP based networks, there does not exist services that would enable anonymous calls between two parties, where neither calling nor called subscriber knows the other party's real subscriber identity.

30   Furthermore, there does not exist services that would enable dual anonymous one-to-one communication using the same account for all types of communication (e.g. voice, data, e-mail, etc.).

35   There is a need for a communications network based method for providing a communications network subscriber with an

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anonymous temporary subscriber identity and for a dual
anonymous communication system. This need exists both in
present circuit-switched wireline and wireless networks as
well as in IP based networks.

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Summary of the present invention

It is an object of the present invention to overcome or at
least mitigate the disadvantages of the prior art. The
10   present invention realizes a communications network based
method for providing a communications network subscriber
with an anonymous temporary subscriber identity and a dual
anonymous communication system.

15   According to a first aspect of the present invention there
is presented a method for providing a communications net-
work subscriber with an anonymous temporary subscriber
identity realized in a communications network having an
originating party A and a terminating party B connected to
20   the network, characterized in that the method comprises
the steps of
-      the terminating party B requesting an anonymous tem-
porary subscriber identity,
-      the communications network reserving an anonymous
25   temporary subscriber identity to which the regular sub-
scriber identity of the terminating party B in the commu-
nications network is associated,
-      the communications network providing the anonymous
temporary subscriber identity to the terminating party B,
30   -   the terminating party B announcing the received
anonymous temporary subscriber identity in an open forum,
-      the originating party A initiating a communication
path towards the anonymous temporary subscriber identity
of the terminating party B in the communications network,
35   -   the communications network establishing a communica-
tion path between the originating party A and the termi-

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nating party B using the regular subscriber identity of
the terminating party B associated with the anonymous tem-
porary subscriber identity.

5   Preferably, in the method according to present invention,
the terminating party B requests the anonymous temporary
subscriber identity via Internet. Alternatively, the ter-
minating party B requests the anonymous temporary sub-
scriber identity via an SMS-interface (SMS, Short Message
10   Service). Alternatively, the terminating party B requests
the anonymous temporary subscriber identity via a WAP-
interface (WAP, Wireless Application Protocol). Alterna-
tively, the terminating party B requests the anonymous
temporary subscriber identity by dialing a number in the
15   communications network. Alternatively, the terminating
party B requests the anonymous temporary subscriber iden-
tity via an email-interface. Preferably, the terminating
party B requests several anonymous temporary subscriber
identities.
20

Preferably, in the method according to present invention,
the terminating party B announces the received anonymous
temporary subscriber identity in Television. Alterna-
tively, the terminating party B announces the received
25   anonymous temporary subscriber identity in a restricted
open forum. More preferably, the restricted open forum is
related to the service providing the anonymous temporary
subscriber identity.

30   Preferably, in the method according to present invention,
the originating party A initiating a communication path
towards the terminating party B suppresses the subscriber
identity in the communication path set up. Alternatively,
the originating party A initiating a call to the terminat-
35   ing party B also uses an anonymous temporary subscriber
identity provided by the communications network.

Preferably, in the method according to present invention, the terminating party B may terminate the use of the anonymous temporary subscriber identity. Preferably, the
5   use of an anonymous temporary subscriber identity is disabled for a certain time period. Preferably, the anonymous temporary subscriber identity is anonymous temporary SIP address (SIP, Session Initiation Protocol). More preferably, the providing of the anonymous temporary SIP address
10   is realized in an application server in an IP based network (IP, Internet Protocol). Alternatively, the providing of the anonymous temporary subscriber identity is realized in an IN platform (IN, Intelligent Network).

15   According to a second aspect of the present invention there is presented an arrangement for providing an arrangement for providing a communications network subscriber with an anonymous temporary subscriber identity realized in a communications network having an originating
20   party A and a terminating party B connected to the network, the arrangement being characterized in that
-       the terminating party B having means for requesting an anonymous temporary subscriber identity,
-       the communications network having means for reserving
25   an anonymous temporary subscriber identity to which the regular subscriber identity of the terminating party B in the communications network is associated,
-       the communications network having means for providing the anonymous temporary subscriber identity to the termi-
30   nating party B,
-       the terminating party B having means for associating his regular subscriber identity with the anonymous temporary subscriber identity,
-       the terminating party B having means for announcing
35   the received anonymous temporary subscriber identity in an open forum,

- a originating party A having means for initiating a communication path towards the anonymous temporary subscriber identity of the terminating party B in the communications network,

5 - the communications network having means for establishing a communication path between the originating party A and the terminating party B using the regular subscriber identity of the terminating party B associated with the anonymous temporary subscriber identity.

10

Preferably, in the arrangement according to present invention, the terminating party B requests the anonymous temporary subscriber identity via Internet. Alternatively, the terminating party B requests the anonymous temporary

15 subscriber identity via an SMS-interface (SMS, Short Message Service). Alternatively, the terminating party B requests the anonymous temporary subscriber identity via a WAP-interface (WAP, Wireless Application Protocol). Alternatively, the terminating party B requests the anonymous

20 temporary subscriber identity by dialing a number in the communications network. Alternatively, the terminating party B requests the anonymous temporary subscriber identity via an email-interface. Preferably, the terminating party B requests several anonymous temporary subscriber

25 identities.

Preferably, in the arrangement according to present invention, the terminating party B announces the received anonymous temporary subscriber identity in Television. Al-

30 ternatively, the terminating party B announces the received anonymous temporary subscriber identity in a restricted open forum. More preferably, the restricted open forum is related to the service providing the anonymous temporary subscriber identity.

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Preferably, in the arrangement according to present inven-
tion, the originating·party A initiating a communication
path towards the terminating party B suppresses the sub-
scriber identity in the communication path set up. Alter-
5   natively, the originating party A initiating a call to the
terminating party B also uses an anonymous temporary sub-
scriber identity provided by the communications network.

Preferably, in the arrangement according to present inven-
10   tion, the terminating party B has means to terminate the
use of the anonymous temporary subscriber identity. Pref-
erably, the use of an anonymous temporary subscriber iden-
tity may be disabled for a certain time period. Prefera-
bly, the anonymous temporary subscriber identity is anony-
15   mous temporary SIP address (SIP, Session Initiation Proto-
col). More preferably, the providing of the anonymous tem-
porary SIP address is realized in an application server in
an IP based network (IP, Internet Protocol). Alterna-
tively, the providing of the anonymous temporary sub-
20   scriber identity is realized in an IN platform (IN, Intel-
ligent Network).

Brief description of the drawings

25   For a better understanding of the present invention and in
order to show how the same may be carried into effect ref-
erence will now be made to the accompanying drawings, in
which:
     Figure 1 illustrates a dual anonymous communication
30   system according to the present invention implemented in
an IP based network.
     Figure 2 illustrates a method for providing a commu-
nications network subscriber with an anonymous temporary
subscriber identity according to the present invention.
35

Detailed description of certain embodiments

The present invention describes a generic solution for all
types of dual anonymous communication in IP based networks
5 (IP, Internet protocol) where communication paths are es-
tablished with SIP signalling (SIP, Session Initiation
Protocol). The present invention also describes how a dual
anonymous communication service can be implemented in an
IP based network by using anonymous temporary SIP ad-
10 dresses to provide anonymity for subscribers.

The solution according to the present invention presents a
new communications network based method for providing a
communications network subscriber with an anonymous tempo-
15 rary subscriber identity and a new dual anonymous communi-
cation system.

Figure 1 illustrates a dual anonymous communication system
according to the present invention implemented in an IP
20 based Network. Figure 1 shows how a Dual Anonymous Commu-
nication system is implemented as an IP network service
using temporary subscriber identities allocated by sub-
scribers. The dual anonymous communication system accord-
ing to the present invention has a subscriber terminal A 1
25 and a subscriber B 2 connected to an IP based network 3.
The dual anonymous communication system according to the
present invention also has an application server named as
DAC-server 5 (DAC, Dual Anonymous Communication) in the IP
based network 3. Furthermore, the dual anonymous communi-
30 cation system according to the present invention has a PC
4 for a connection to the DAC-server 5 (PC, Personal Com-
puter). A router in the IP network 3 is marked with a ref-
erence number 6.

35 Dual anonymous communication is enabled by reserving a
pool of SIP-addresses (SIP, Session Initiation Protocol)

for the Dual Anonymous Communication service in the DAC-
server 5. These addresses are used as temporary network
identification for dual anonymous communication. A sub-
scriber can reserve a anonymous temporary SIP address in a
5   DAC server 5 with a PC 4 over e.g. an IP connection. When
a subscriber with an anonymous temporary SIP address con-
nects to the IP based network, he/she associates the real
subscriber identity (e.g. a regular SIP address) with the
anonymous temporary SIP address in the DAC server 5 using
10 SIP message REGISTER.

A dual anonymous connection is set up in the following way
using SIP signalling. The originating subscriber A 1 con-
tacts the DAC server 5 with INVITE message using a anony-
15 mous temporary SIP address associated to the terminating
subscriber B 2. The DAC server 5 replaces the anonymous
temporary SIP address with subscriber B's 2 original net-
work identity and sends INVITE message towards the sub-
scriber B 2.
20
As an alternative, the DAC server can suppress or remove
the A-subscriber's network identity in/from the INVITE
message sent by DAC server. Likewise, the DAC server 5 can
replace the A-subscriber's original network identity with
25 a generic DAC server identity or with a temporary network
identity in case subscriber B 2 has subscribed to a anony-
mous temporary SIP address in the DAC server 5.

The solution according to the present invention is appli-
30 cable to all types of bearers available for communication
between two parties in an IP based network, for example e-
mail, voice calls, chat and real time video.

The anonymous temporary SIP address can be used for commu-
35 nication path set up as long as the originating and termi-
nating subscriber want to be anonymous to each other, ena-

bling the service provider to generate additional revenue. Usage of the service can be indicated using charging data collected for anonymous communication in the network.

5   Figure 2 illustrates a method for providing a communications network subscriber with an anonymous temporary subscriber identity according to the present invention. In the solution according to the present invention a subscriber requests 7 a temporary subscriber identity using

10   web access or SMS. The DAC system then reserves 8 a temporary subscriber identity and replaces this with subscriber B's regular subscriber identity. The DAC system then provides 9 this temporary subscriber identity to the subscriber B. Subscriber B then announces 10 the temporary

15   subscriber identity to the subscriber A. The originating subscriber A initiates 11 a call using the temporary number or sends an INVITE message 11 to the IP network using the anonymous temporary SIP address. The DAC system replaces the temporary subscriber identity with subscriber

20   B's original network identity and routes the call 12 to the called party.

Considering the popularity of anonymous chatting on the Internet, TV and over GSM, this invention has big several

25   implementation applications. The service is easy to implement and can be deployed in existing GSM/UMTS network in a very short timeframe. Also implementation cost in IP networks is low. This type of service could be advertised for example in Internet chat rooms and TV chat.

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In the solution according to the present invention a subscriber can reserve a temporary subscriber identity or even several temporary subscriber identities using web access or SMS. The temporary subscriber identity will be as-

35   sociated to the person's regular subscriber identity in the SCP or in the IP Network.

B gives the temporary subscriber identity to A. Person A
can then call the temporary subscriber identity reserved
by B without actually knowing A's real subscriber iden-

5   tity. B on the other hand will not know A's identity if
Calling Line Identity Restriction is applied for A. This
is optional. If B doesn't want to have anything to do with
A anymore, B can easily get rid of the temporary sub-
scriber identity and possibly reserve a new temporary sub-

10   scriber identity instead. This way, A has no way of call-
ing B anymore. The pool of temporary subscriber identities
has to be relatively big so that the time interval when
the same temporary subscriber identity is reserved again
is big enough.

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Compared to using a calling card, the threshold to start
using this kind of service is much lower. The service can
be used with an ordinary subscription from anywhere. Chat-
ting on TV and Internet is nowadays extremely popular. The

20   service according to the present invention could be imple-
mented on TV and Internet in chat forums.

Claims

1.   A method for providing a communications network sub-
scriber with an anonymous temporary subscriber identity

5   realized in a communications network having an originating
party A and a terminating party B connected to the net-
work, characterized in that the method comprises the steps
of
    -    the terminating party B requesting an anonymous tem-

10   porary subscriber identity (7),
    -    the communications network reserving an anonymous
temporary subscriber identity to which the regular sub-
scriber identity of the terminating party B in the commu-
nications network is associated (8),

15   -   the communications network providing the anonymous
temporary subscriber identity to the terminating party B
(9),
    -    the terminating party B announcing the received
anonymous temporary subscriber identity in an open forum

20   (10),
    -    the originating party A initiating a communication
path towards the anonymous temporary subscriber identity
of the terminating party B in the communications network
(11),

25   -   the communications network establishing a communica-
tion path between the originating party A and the termi-
nating party B using the regular subscriber identity of
the terminating party B associated with the anonymous tem-
porary subscriber identity (12).

30

2.   A method according to claim 1, characterized in that
the terminating party B requests the anonymous temporary
subscriber identity via Internet.

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3.   A method according to claim 1, characterized in that the terminating party B requests the anonymous temporary subscriber identity via an SMS-interface.

5   4.   A method according to claim 1, characterized in that the terminating party B requests the anonymous temporary subscriber identity via a WAP-interface.

5.   A method according to claim 1, characterized in that
10   the terminating party B requests the anonymous temporary subscriber identity by dialing a number in the communications network.

6.   A method according to claim 1, characterized in that
15   the terminating party B requests the anonymous temporary subscriber identity via an email-interface.

7.   A method according to any of the claims 1-6, characterized in that the terminating party B requests several
20   anonymous temporary subscriber identities.

8.   A method according to any of the claims 1-7, characterized in that the terminating party B announces the received anonymous temporary subscriber identity in Televi-
25   sion.

9.   A method according to any of the claims 1-7, characterized in that the terminating party B announces the received anonymous temporary subscriber identity in a re-
30   stricted open forum.

10.   A method according to the claim 9, characterized in that the restricted open forum is related to the service providing the anonymous temporary subscriber identity.

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11.   A method according to any of the claims 1-10, char-
acterized in that the originating party A initiating a
communication path towards the terminating party B sup-
presses the subscriber identity in the communication path
5   set up.

12.   A method according to any of the claims 1-10, char-
acterized in that the originating party A initiating a
call to the terminating party B also uses an anonymous
10   temporary subscriber identity provided by the communica-
tions network.

13.   A method according to any of the claims 1-12, char-
acterized in that the terminating party B may terminate
15   the use of the anonymous temporary subscriber identity.

14.   A method according to any of the claims 1-13, char-
acterized in that the use of an anonymous temporary sub-
scriber identity is disabled for a certain time period.
20

15.   A method according to any of the claims 1-14, char-
acterized in that the anonymous temporary subscriber iden-
tity is anonymous temporary SIP address.

25   16.   A method according to claim 15, characterized in
that the providing of the anonymous temporary SIP address
is realized in an application server in an IP based net-
work.

30   17.   A method according to any of the claims 1-14, char-
acterized in that the providing of the anonymous temporary
subscriber identity is realized in an IN platform.

18.   An arrangement for providing a communications net-
35   work subscriber with an anonymous temporary subscriber
identity realized in a communications network having an

originating party A and a terminating party B connected to
the network, the arrangement being characterized in that
- the terminating party B having means for requesting
an anonymous temporary subscriber identity,

5 - the communications network having means for reserving
an anonymous temporary subscriber identity to which the
regular subscriber identity of the terminating party B in
the communications network is associated,
- the communications network having means for providing

10 the anonymous temporary subscriber identity to the termi-
nating party B,
- the terminating party B having means for associating
his regular subscriber identity with the anonymous tempo-
rary subscriber identity,

15 - the terminating party B having means for announcing
the received anonymous temporary subscriber identity in an
open forum,
- a originating party A having means for initiating a
communication path towards the anonymous temporary sub-

20 scriber identity of the terminating party B in the commu-
nications network,
- the communications network having means for estab-
lishing a communication path between the originating party
A and the terminating party B using the regular subscriber

25 identity of the terminating party B associated with the
anonymous temporary subscriber identity.

19.   An arrangement according to claim 18, characterized
in that the terminating party B requests the anonymous

30 temporary subscriber identity via Internet.

20.   An arrangement according to claim 18, characterized
in that the terminating party B requests the anonymous
temporary subscriber identity via an SMS-interface.

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21.   An arrangement according to claim 18, characterized
in that the terminating party B requests the anonymous
temporary subscriber identity via a WAP-interface.

5   22.   An arrangement according to claim 18, characterized
in that the terminating party B requests the anonymous
temporary subscriber identity by dialing a number in the
communications network.

10   23.   An arrangement according to claim 18, characterized
in that the terminating party B requests the anonymous
temporary subscriber identity via an email-interface.

24.   An arrangement according to any of the claims 18-23,
15   characterized in that the terminating party B requests
several anonymous temporary subscriber identities.

25.   An arrangement according to any of the claims 18-24,
characterized in that the terminating party B announces
20   the received anonymous temporary subscriber identity in
Television.

26.   An arrangement according to any of the claims 18-24,
characterized in that the terminating party B announces
25   the received anonymous temporary subscriber identity in a
restricted open forum.

27.   An arrangement according to the claim 26, character-
ized in that the restricted open forum is related to the
30   service providing the anonymous temporary subscriber iden-
tity.

28.   An arrangement according to any of the claims 18-27,
characterized in that the originating party A initiating a
35   communication path towards the terminating party B sup-

presses the subscriber identity in the communication path
set up.

29.   An arrangement according to any of the claims 18-27,
5   characterized in that the originating party A initiating a
call to the terminating party B also uses an anonymous
temporary subscriber identity provided by the communica-
tions network.

10   30.   An arrangement according to any of the claims 18-29,
characterized in that the terminating party B has means to
terminate the use of the anonymous temporary subscriber
identity.

15   31.   An arrangement according to any of the claims 18-30,
characterized in that the use of an anonymous temporary
subscriber identity may be disabled for a certain time pe-
riod.

20   32.   An arrangement according to any of the claims 18-31,
characterized in that the anonymous temporary subscriber
identity is anonymous temporary SIP address.

33.   An arrangement according to claim 32, characterized
25   in that the providing of the anonymous temporary SIP ad-
dress is realized in an application server in an IP based
network.

34.   An arrangement according to any of the claims 18-31,
30   characterized in that the providing of the anonymous tem-
porary subscriber identity is realized in an IN platform.

FIG. 1

2/2
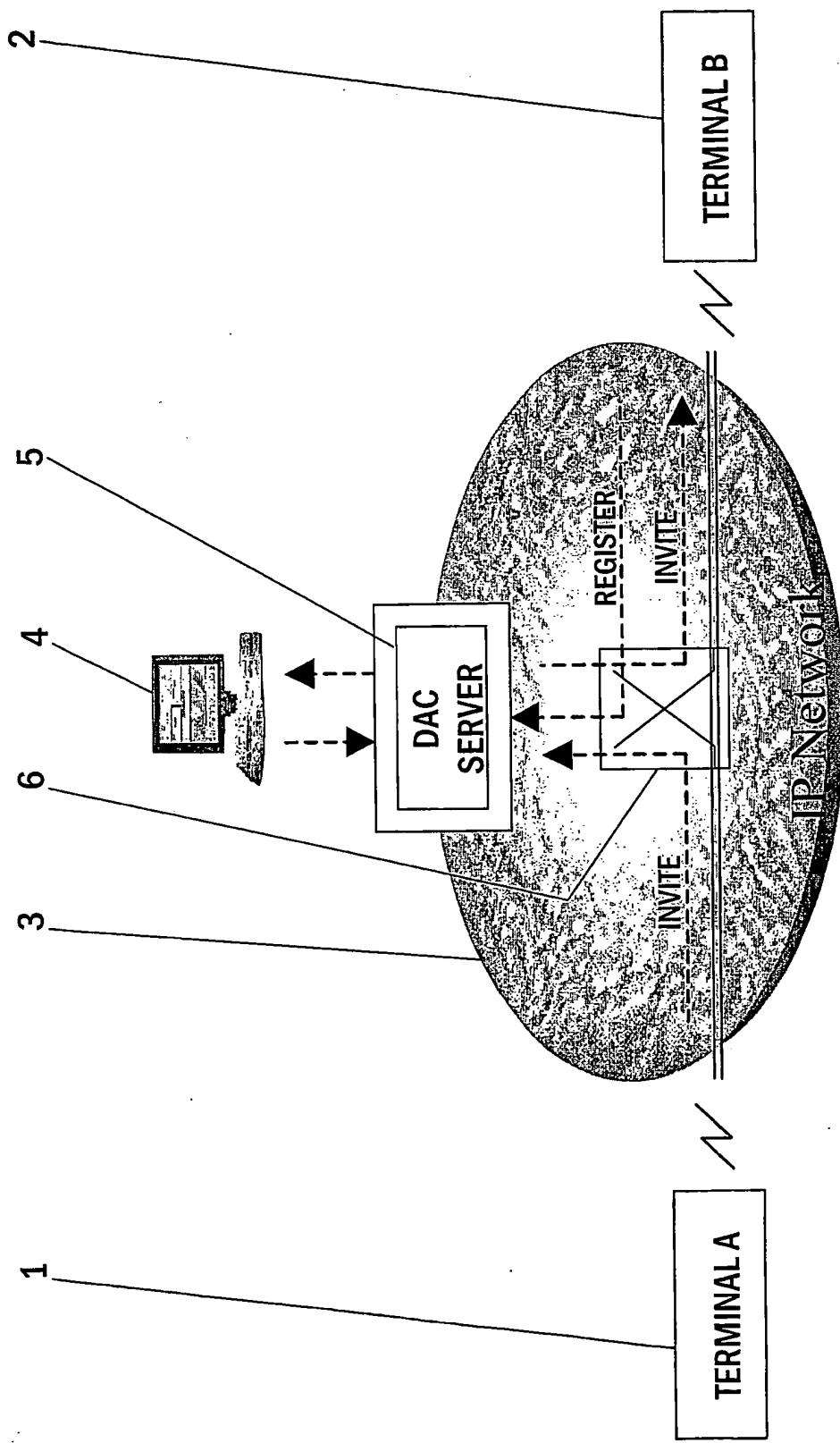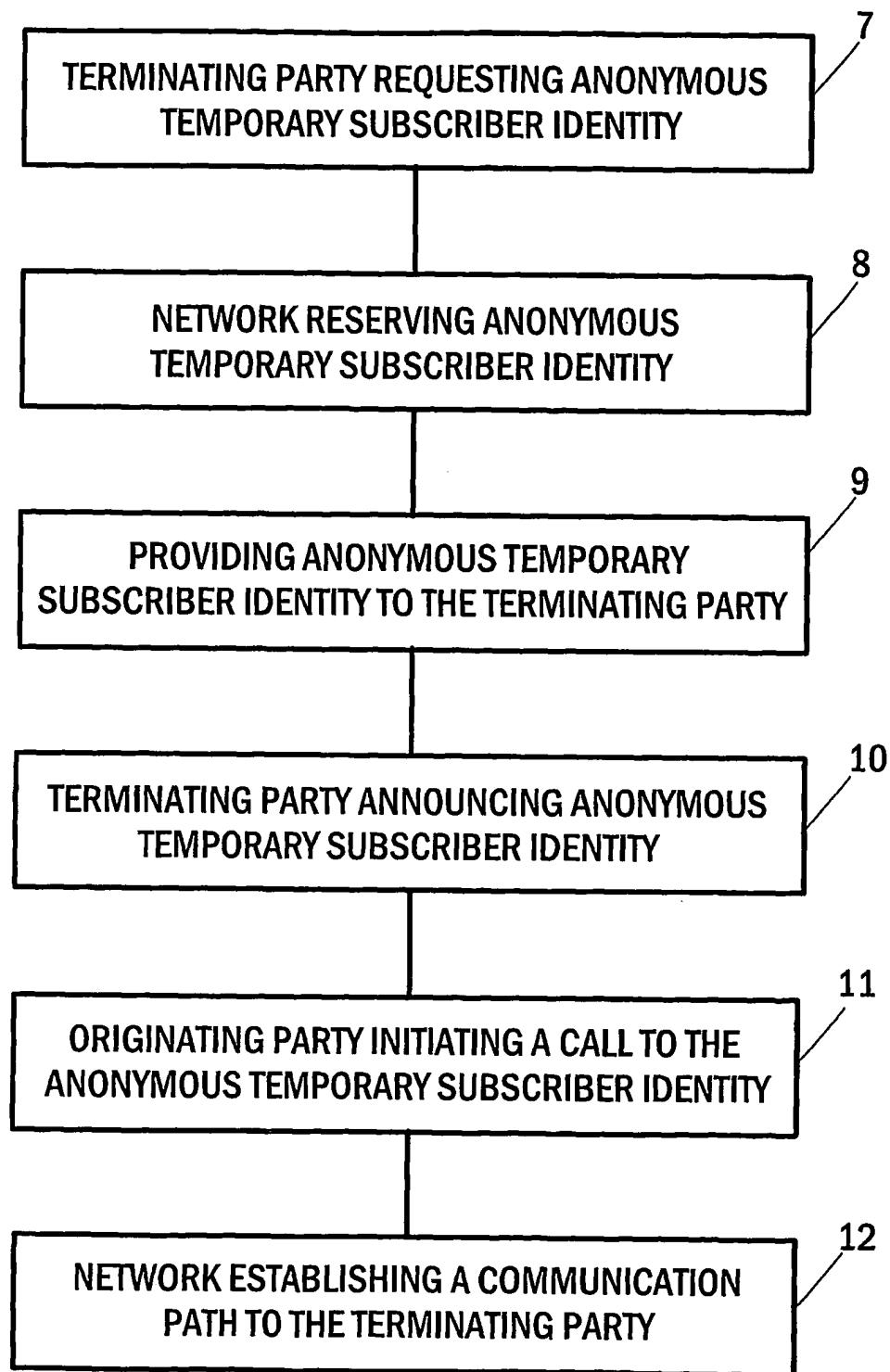
FIG. 2

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7   H04L29/06   H04L9/00   H04L12/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7   G06F   H04L   H04M   H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01 31903 A (GENUITY INC ;GTE SERVICE CORP (US)) 3 May 2001 (2001-05-03) page 1, line 20 - line 27 page 6, line 19 -page 8, line 9 abstract	1-14, 16-31, 33,34
Y		15,32

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[X] Further documents are listed in the continuation of box C.   [X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the International filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
15 May 2003	11 06. 2003

| Name and mailing address of the ISA
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category°	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	W. MARSHALL ET AL: "SIP Extensions for Caller Identity and Privacy" SIP WORKING GROUP INTER DRAFT: <DRAFT-IETF-SIP-PRIVACY-03.TXT>, [Online] 21 November 2001 (2001-11-21), XP002241238 Retrieved from the Internet: <URL:http://cs.sch.ac.kr/~jck/download/sip doc/SIP_Draft_and _Test_Info/draft-ietf-sip-priv > [retrieved on 2003-05-15] page 2, line 42 -page 3, line 20 page 5, line 13 -page 6, line 6 abstract ---	15,32
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